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ABSTRACTS



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(ABSTRACTS)

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1. GAP: NON MONETARY WAY TO MANAGE FABA BEAN DISEASES—A REVIEW

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ABSTRACT: Fabia bean (*Vicia faba* L.) is, among the oldest crops in the world, attacked by a wide range of pathogens although each of these diseases is quite destructive, when two or more interact on the same plant, their combined effect becomes greater. Good agronomic practices are in general non monetary interventions, discussed here under suitable heads, which can be easily adopted by the farmers to manage faba bean disease smartly. It is an efficient and excellent tool for effective disease-pest management in general and especially for soil borne pathogens and diseases like chocolate spot, ascochyta blight and rot etc.

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2. INFLUENCE OF POSITIONS OF BEARING AND METHODS OF HARVESTING ON THE QUALITY OF FRUITS—A REVIEW

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ABSTRACT: India is blessed with varied climatic conditions and is thus the home of various types of fruits. But most of the fruits are highly perishable and show a great decline in quality as well as storage life soon after harvest. This decline is further aggravated if harvesting is not done at the right time and by the correct method. Moreover position of bearing also plays a key role in the quality of fruit. Fruit position on tree is found to influence the fruit size, maturity, skin colour, flesh colour, mineral composition, TSS, acidity and fruit yield. Harvesting fruits with and without pedicel in addition to affecting the storage life of fruits, also affects sugar content, acidity, fruit firmness and colour retention. This review summarises effects of positions of bearing and methods of harvesting on the overall quality of fruits.

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3. STATUS OF DRY MATTER AT HARVESTING STAGE IN COMMERCIALY GROWN GRAPE VARIETIES UNDER TROPICAL CLIMATIC CONDITION

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ABSTRACT: The experiment was conducted at NRC for Grapes, Pune during year 2007-08. Four commercially cultivated grape varieties viz. Thompson Seedless, Tas-A-Ganesh, Flame Seedless and Sharad Seedless were analyzed for dry matter content during harvesting stage of the crop. Dry matter partitioning in different parts of vines were observed. Highly significant differences were observed among varieties, various vine parts and their combinations. Among the varieties, maximum dry matter content was recorded in Sharad Seedless (42.87%) followed by Tas-A-Ganesh (42.29%) and among the various parts of the vine, it was found maximum in cordon (54.84%) followed by trunk (54.39%). When dry matter content was measured in particular variety in specific part of the vine, maximum dry matter was recorded in the trunk of Sharad Seedless variety. Roots are the source of nutrient absorption by the vine. Root health found to be positively correlated with the health of the plant and productivity. In the present experiment, highest dry matter content of the roots was observed in the Sharad Seedless with the mean value of 47.72%. Also the dry matter content of the harvestable organ (bunches) was found maximum in Sharad Seedless (25.73%) as compared to other variety.

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4. PERFORMANCE OF PLANTING MATERIAL ON GROWTH AND YIELD OF TURMERIC UNDER GUAVA ORCHARD

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Abstract: The present investigation was conducted to find out the effect of different planting materials i.e. mother rhizome, primary finger, secondary finger and tertiary fingers on plant growth, yield and yield contributing characters along with economics of turmeric cv. Erode

Selection-1. All the intercropping systems showed significant enhancement in the height of the tree varying from 1.25 to 3.40 over the sole tree. Among the different intercrops, better growth of the guava tree was observed where mother rhizome turmeric was grown as intercrop followed by primary, secondary and tertiary fingers treatments. Plant height and number of tillers per plant were enhanced in mother rhizome of turmeric (96.68 cm and 4.03, respectively) under shade of guava plant which results maximum survival percentage (98.45%) and its growth and performance was better than other planting materials. The highest number of fingers per plant (13.64), finger length (9.06), finger weight (36.14) and yield (389.47g/plant and 235.41q/ha) were recorded when turmeric were grown under juvenile guava tree which was significantly higher than all other planting materials. All the turmeric planting materials grown under shade of juvenile guava orchards were found most desirable in terms of vegetative growth, yield, gross return, net return and benefit cost ratio than sole crop.

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5. OPTIMIZATION OF PLANTING DENSITY IN CARNATION

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ABSTRACT: The experiment on optimization of plant density inside a greenhouse for growing carnation is a very important area for present day production and productivity. The results of the study on optimization of planting density in carnation led to the inference that planting density in treatment T₄ (check) (15 X 15 cm with 36 plants/m²) proved better in terms of flower quality parameters namely early flower bud appearance, bud opening, longest duration of flowering, chlorophyll content and more number of flowers per plant due to congenial microclimate between the plants for the plant growth and flowering. Though the percentage of 'A' grade quality flowers were higher in treatment T₃ (20 X 20 cm with 20 plants per m²), the number of plants and flower yield per sq. m. in this treatment was very less. Hence, treatment T₄ (check) with 15 X 15 cm spacing may convincingly be followed for obtaining more number of flowers per plant and per unit area and value in terms of economic success of the crop.

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6. EVALUATION OF THE INCIDENCE OF POWDERY MILDEW (*SPHAEROTHECA FULIGINEA*) ON BOTTLE GOURD

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ABSTRACT: Powdery mildew caused by *Sphaerotheca fuliginea* on local cultivars of bottle gourd was found greatly influenced by the natural epiphytotic condition both from the farmers' fields and experimental plot at Research and Demonstration Farm Ruzaphema, Nagaland (India). The maximum intensity ranges from 51.45 – 86.90 per cent in local cultivar at 95DAP during the peak month of June 2005 with average temperature (29.25 °C), dew point (27.4 °C), relative humidity (84.7 %) and rainfall (3.78 mm), respectively. Disease intensity and per cent plant infection were non significantly correlated with the relative humidity, rainfall, temperature and humidity at (P =0.05). However, per cent of infection and disease intensity was found significant and positively correlated with dew point in both the fields. Due to genetically adopted factors with the host cultivars significant difference on the yield records from both the fields ranged between 20.18 - 24.55 t/ha under Nagaland condition and can be used for future breeding programme for developing resistant variety.

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7. INTEGRATED MANAGEMENT OF POWDERY MILDEW OF GERBERA UNDER POLYHOUSE CONDITION IN ARUNACHAL PRADESH

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ABSTRACT: Powdery mildew caused by the fungus *Erysiphe cichoracearum* DC. is a common disease of gerbera grown in Indian conditions. Fungicidal and varietal trial was conducted at Instructional farm, Department of Floriculture, College of Horticulture and Forestry, Central Agricultural University, Pasighat, during April 2011 to March 2012. In fungicidal disease management, least disease severity (5.23%) was observed in spray of wettable sulphur @ 2.5g/l of water followed by Carbendazim @ 2g/l of water foliar spray (7.23 %). Whereas, the unprotected treatment showed highest disease severity (65.30 %). The highest number of flowers m⁻² / year (195.00) and number of suckers / plant / year (6.60) were also recorded in wettable sulphur @ 2.5g/l of water foliar spray. Powdery mildew symptoms were first observed on the leaves of the varieties viz. Pia, Rionegro and Tecala on 30th day after planting. In Manizales, Teresa and Galileo powdery mildew incidence was started only after 38 days of

planting. On the other varieties Figaro, Marinila and Palmira powdery mildew incidence was started only after 68 days of planting. Palmira variety showed resistance to powdery mildew with per cent disease index of 9.27% at the end of 160 days after planting followed by Figaro and Marinila with PDI of 9.73% and 10.23%, respectively. Variety Teresa showed moderately resistant reaction (24.57 %) against powdery mildew infection. Varieties Pia and Tecala were highly susceptible to powdery mildew throughout the experiment which showed per cent disease index of 65.30% and 54.27%, respectively. Other varieties like as Galileo (34.73%), Manizales (46.93%) and Rionegro (49.67%) showed susceptible reaction to powdery mildew infection.

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8. INFLUENCE OF MICROBIAL, ORGANIC AND INORGANIC SOURCES OF NUTRIENTS ON GROWTH PARAMETERS OF STRAWBERRY

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ABSTRACT: An experiment was conducted to study the influence of microbial sources of nutrients along with organic and inorganic sources on the vegetative growth parameters of strawberry cv. Chandler. The data observed at different days after transplanting (30, 45, 60, 75, 90 and 105 days) clearly indicate that the application of integrated sources of nutrients significantly affect the vegetative growth of the plant. The maximum growth in terms of height of the plant (5.83 cm, 8.31 cm, 12.61 cm, 14.83 cm, 17.44 cm and 19.25 cm), number of leaves per plant (5.81, 10.27, 13.66, 16.86, 18.04 and 18.80), length of leaves (6.34cm, 6.96cm, 7.32 cm, 8.00 cm 8.32 cm and 8.80 cm) and width of leaves (5.16cm, 6.58cm, 7.86 cm, 8.93 cm, 10.20 cm and 10.94cm) were recorded in the treatment T₁₂ - *Azotobacter* (50%) + *Azospirillum* (50%) + NPK (50%) + FYM at 30, 45, 60, 75, 90 and 105 DAT respectively in each respective parameters which was statistically significant over control (T₁) where recommended dose of fertilizer was applied.

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9. MULTIPLICATION OF BOUGAINVILLEA CV. TORCH GLORY THROUGH SHOOT TIP CUTTING UNDER MIST CHAMBER

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ABSTRACT: The experiment was conducted under mist chamber at Horticulture Research Centre, HNB Garhwal University, Chauras Campus Srinagar (Garhwal), Uttarakhand. The different length stem cuttings (20, 35 and 50 cm) of Bougainvillea cv. Torch Glory treated with IBA solutions at 3000, 4000 and 5000 mg L⁻¹ by quick dip method were planted carefully in the root trainers. Among all the treatments, maximum number of sprouted cuttings (90.0%) and maximum number of sprouts per cutting (30.22) were observed under C₁L₂ (35 cm long cuttings treated with 3000 ppm IBA) treatment, maximum length of sprout per cutting (3.25 cm) and maximum height of plant (63.86 cm) was found under C₁L₃ (50 cm long cuttings treated with 3000 ppm IBA), maximum diameter of sprouts per cutting (0.74 cm) was recorded under C₃L₁ (35 cm long cuttings treated with 5000 ppm IBA). Number of leaves on new growth (7.48) was found maximum under C₃L₃ (50 cm long cutting treated with 5000 ppm IBA), length of longest root (9.90 cm) was maximum under C₂L₃ treatment (50 cm long cutting treated with 4000 ppm IBA), profuse callus formation (77.77%) was found in C₁L₁ treatment (50 cm long cutting treated with 3000 ppm IBA) and secondary rooting (77.77%) was found better under C₁L₂ and C₁L₃ (35 cm and 50 cm long cuttings treated with 3000 ppm IBA) treatments.

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10. DISTRIBUTION PATTERN OF DIAMONDBACK MOTH, *Plutella xylostella* (L.) ON CABBAGE UNDER GANGETIC ALLUVIAL CONDITION OF WEST BENGAL

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ABSTRACT: Distribution pattern of diamondback moth larvae *Plutella xylostella* (L.) on cabbage (*Brassica oleracea* var. *capitata* L.) was studied under Gangetic Alluvial condition of West Bengal in three consecutive cabbage seasons (early cabbage, on season cabbage and late cabbage) during 2009-10. Various indices like dispersion parameter 'K', index of dispersion (Id), reciprocal of the exponent K, Cole's Index, Charlier Coefficient, Lloyd index of mean crowding and Lloyd index of patchiness confirmed that the distribution pattern of the diamondback moth larvae under the study in three crop seasons was aggregative in nature.

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11. EFFECT OF SPACING AND PLANT ARCHITECTURE ON YIELD AND ECONOMICS OF CAPSICUM UNDER NET HOUSE CONDITIONS

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ABSTRACT: The experiment was conducted at Main Garden of Department of Horticulture, Dr. PDKV, Akola to study the effect of spacing and plant architecture on yield and economics of capsicum under nethouse condition. The experiment was laid out in Split Plot Design with four replications in aluminated net house. There were three levels of plant spacing and three levels of pruning together making nine treatment combinations. The treatments included three levels of plant spacing $S_1 = 45 \times 30$ cm, $S_2 = 45 \times 45$ cm and $S_3 = 45 \times 60$ cm, and three levels of plant architecture P_1 - pruned for four stem, P_2 - pruned for two stem and P_3 - unpruned. The results of present investigation indicate that yield per hectare was highest at in closer spacing (S_1) and four stem pruning (P_1). While, the wider spacing treatment (S_3) and unpruned (P_3) recorded minimum values in these respect. The treatment combination S_1P_1 (45×30 cm spacing along with the four stem pruning) have recorded the maximum values regarding yield per hectare. However, the cost; benefit ratio was found to be highest in plant spaced at $45\text{cm} \times 45\text{cm}$ with four stem pruning (S_2P_1) and it was followed by S_1P_1 and S_2P_2 .

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12. EFFECT OF LENGTH OF CUTTING AND CONCENTRATION OF IBA ON ROOTING IN SHOOT TIP CUTTING OF SAWANI (*LAGERSTROEMIA INDICA* L.) UNDER MIST CONDITION

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ABSTRACT: The experiment was conducted under mist chamber at Horticulture Research Centre, HNB Garhwal University, Chauras Campus Srinagar (Garhwal). The different length stem cuttings (20, 35 and 50 cm) of *Lagerstroemia indica* L. were treated with IBA solutions at 500, 1000 and 1500 ppm by quick dip method. Treated cuttings were planted carefully in the root trainers. Among all the treatments, the maximum number of sprouted cuttings (10.00) was found under 20 cm long cutting treated with 1000 ppm and 1500 ppm IBA and 35 cm long cutting treated with 1500 ppm, respectively, maximum height of plant (67.33 cm) was found in 50 cm long cutting treated with 1500 ppm IBA, the highest number of sprouts per cutting (14.00) was found under 50 cm long cutting treated with 1500 ppm IBA. The maximum length of sprout (28.33 cm) was found in 50 cm long cutting treated with 1500 ppm IBA, maximum average diameter of sprout (3.10 cm) was found in 50 cm long cutting treated with 1500 ppm IBA, maximum number of leaves on new growth (106.00) and maximum number of primary roots (36.66) was found in 50 cm long cutting treated with 1500 ppm IBA, maximum average length of longest root (12.50 cm) was found under 20 cm long cutting treated with 500 ppm IBA and maximum average diameter of longest root (1.53 cm) was found in 35 cm long cutting treated with 1500 ppm IBA.

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13. SOME PHYSICAL AND FRICTIONAL PROPERTIES OF PHULE MOSAMBI AND KINNOW

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ABSTRACT: Citrus is of high importance in agriculture now days and a substantial source of income for the producing countries. Physical and frictional properties of fruits as well as oranges are important for design of post harvest handling and processing machineries. The present work was undertaken to determine the spatial dimensions, equivalent diameter, sphericity, weight, volume, specific gravity and coefficient of friction of Phule Mosambi and Kinnow or Tangerine (*Citrus reticulata*). The average equivalent diameter, sphericity, weight, volume and specific gravity for Phule Mosambi was 65.68 mm, 0.96, 165.14 g, 170.31 cm³ and 1000.5 kg/m³ and that of Kinnow fruits was 66.44 mm, 0.95, 156.71 g, 146.97 cm³ and 1086 kg/m³. The average coefficient of friction over plywood, aluminium and mild steel was 0.39, 0.43 and 0.45, respectively for Phule Mosambi and in case of Kinnow it was 0.36, 0.41 and 0.42, respectively.

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14. RESPONSE OF BIO-REGULATORS ON HORTICULTURAL TRAITS OF BELL PEPPER UNDER PROTECTED CONDITION

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ABSTRACT: The investigation on responses of bio-regulators on horticultural traits of bell pepper cv. California Wonder under protected condition was undertaken at Horticultural Research Centre of H.N.B. Garhwal University, Srinagar (Garhwal). The results revealed that the bio-regulators spray had significant influence on growth, yield and quality. Spraying of NAA at 50 ppm significantly increased the plant height, number of secondary branches, leaf area, days taken to first flower, days taken to 50 per cent flower, number of flowers/plant, number of fruits/plant, fruit set per cent, days taken to fruit set, days taken to first picking, duration of marketable fruit, fruit breadth, fruit weight, yield/plant, yield/plot, yield/hectare, number of seeds/fruit, 1000 seed weight, specific gravity, TSS while fruit length increased in IAA at 100 ppm. This experiment shows that bio-regulator especially NAA at 50 ppm is very helpful for enhancing the total production of capsicum under protected condition.

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15. EFFECT OF SOWING DATES ON PHYTOPHTHORA BLIGHT OF TARO (*COLOCASIA ESCULENTA* VAR. *ANTIQUORUM*)

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ABSTRACT: The present investigation was carried out to evaluate the effect of date of sowing on per cent plant infection, per cent disease intensity, coefficient of disease index and yield attributes of taro (*Colocasia esculenta* var. *antiquorum*). The crop sown during 15th February gave highest cormel yield, despite maximum per cent plant infection, per cent disease intensity and coefficient of disease index in comparison to crop sown at 15th March, 15th April and 15th May during the Kharif 2006 and 2007 cropping season, respectively.

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16. BIO-PHYSICAL PROPERTIES OF THE PAPAYA RINGSPOT VIRUS CAUSING RINGSPOT DISEASE IN PAPAYA (*Carica papaya* L.)

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ABSTRACT: Papaya ring spot virus (PRSV), a member of *Potyviridae*, is one of the devastating virus of the papaya and causes yield loss more than 90 per cent. It has proved as major constraint for successful cultivation of this crop in the tropical and sub tropical countries. The virus contains ribonucleic acid (RNA) with filamentous particle. The dilution end point of papaya ringspot virus was recorded between 1×10^{-3} to 1×10^{-4} thermal inactivation point between 50–55°C and longevity *in vitro* between 8 to 10 hrs.

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17. EFFECT OF BIOFERTILIZERS AND PRESOAKING TREATMENTS OF NITRATE SALTS ON YIELD AND CHARACTER ASSOCIATION IN CORN (*Zea mays* L.) YIELD

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ABSTRACT: Experiment was conducted at Precision Farming Development Centre IGKV, Raipur during kharif 2008-09 and 2009-10 in split plot design comprising of three varieties (Deshi, hybrid and composite) of corn as a main plot while biofertilizers and nitrate salts combination in sub plot treatments. Observations were taken at specific growth phases of the crop which clearly indicated superiority of association of grain yield with different yield contributing morpho-physiological traits of corn.

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18. EFFECT OF DIFFERENT MEDIA, pH AND TEMPERATURE ON THE RADIAL GROWTH AND SPORULATION OF *Alternaria alternata* f.sp. *lycopersici*

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ABSTRACT: *Alternaria alternata* f.sp. *lycopersici* was grown on nine different solid media to observe the radial growth of the test fungus. P.D.A. medium favored the maximum growth and lowest growth was recorded on standard nutrient agar medium. While poor sporulation was recorded on the host extract agar medium. The temperature requirement of the pathogen was investigated on P.D.A. medium in the range of 10 to 35 C. The fungus exhibited maximum growth at a wide range of pH from 5.0 to 8.5 and the best fungal growth was recorded at pH 7.0 and poor growth was observed at pH 5.0.

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19. EFFECT OF WEEDICIDE IN MINIMIZATION OF WEED MENANCE IN NAGPUR MANADARIN ORCHARD

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ABSTRACT: During Kharif season weed poses serious threats in mandarin orchards and sometimes the infestation of weed flora is so high that it creates great challenge in maintaining the plant growing and surviving properly. To counter weed problem, weedicides have proven its worth. Labour availability getting problematic day by day, option of weed control rests with the view of weedicide with such an idea an experiment was conducted with a view to assess the efficacy of weedicide in countering weed growth in newly grown mandarin orchard. The orchard was having heavy infestation of *Echinocola cholena*, *Celosia* sp, *Cassia tora*, *Comelina communis*, *C. benghalensis*, *Abelmoschus muschatus*, *Euphorbia xeniculata*, *Parthenium hysterophorus*, etc. From the experiment it appeared that Isoproturon 75% WP @ 2% was found most efficacious out of 2, 4-D, Oxyflourfen, Glyphosate and Imazethapyr used to control weeds in mandarin orchard.

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20. IMPACT OF DIFFERENT FERTIGATION LEVELS ON MORPHO-PHYSIOLOGICAL TRAITS AND YIELD OF CUCUMBER UNDER GREENHOUSE CONDITION

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ABSTRACT: The experiment was carried out at Precision Farming Development Centre (PFDC) Deptt. of Horticulture, Indira Gandhi Krishi Vishwavidyalaya, Raipur (C.G.) during Kharif 2012. Experiment was conducted in RBD comprising of five treatments viz. 60%, 80%, 100%, 120% and control fertigation (water soluble fertilizers) levels under the greenhouse condition. Observations were taken on vine length, vine girth, chlorophyll content, days to first flowering, days to first fruiting, fruit length, fruit, diameter, fruit weight and fruit yield. Results revealed that most of the parameters studied showed maximum values with fertilization with 100% RDF.

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21. STANDARDIZATION OF PACKAGE OF PRACTICES FOR ZAMIKAND (*AMORPHOPHALLUS CAMPANULATUS* BLUME.) CULTIVATION

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ABSTRACT: Field experiment was conducted at Department of Vegetable Science, Chandra Shekhar Azad University of Agriculture and Technology Kalyanpur, Kanpur on zamikand variety Azad Suran-1 with the objective to work out the optimum spacing between plant to plant and row to row and suitable seed size for general cultivation. The experiment with five different seed sizes and four spacings was conducted. Results revealed that 75 X 75 cm spacing with 0.750 kg weight of corm was relatively economical over 1.000 kg seed weight at the same spacing.

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